

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE  
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. A jacketed projectile having front and rear ends and comprising a solid  
5 central core having a midsection portion which is not in continuous contact with  
the jacket to allow engraving to occur over at least a portion of the midsection  
without full support from core when the projectile is fired through a rifled  
barrel.
- 10 2. A projectile as in claim 1 comprising an encircling gap between the jacket  
and the core along the surface of said midsection portion of the core.
3. A projectile as in claim 2 wherein the midsection portion is tapered,  
tapering towards the front end of the projectile.
- 15 4. A projectile as in claim 3 where in the midsection portion is frusto-conical  
in shape,.
5. A projectile according to claim 4 wherein the half-conical angle of the  
20 frusto-conical portion of the core is between  $0.7^{\circ}$  and  $1.0^{\circ}$ .
6. A projectile according to claim 4 wherein the half-conical angle of the  
frusto-conical portion of the core is between  $0.85^{\circ}$  and  $0.95^{\circ}$ .
- 25 7. A projectile according to any one of the preceding claims comprising a  
short cylindrical portion of the core extending rearwardly from the midsection of  
the core
8. A projectile according to claim 7 wherein the cylindrical portion of the  
30 core is less than 30% of the length of than the midsection portion.
9. A projectile as in claim 3 comprising an encircling tapered gap between  
the jacket and the frusto-conical midsection.

10. A projectile as in claim 9 wherein the gap is occupied by a compressible medium.
- 5 11. A projectile as in claim 10 wherein the compressible medium is air.
12. A projectile as in any of the previous claims wherein the steel core comprises carbon steel.
- 10 13. A projectile as in claim 12 wherein the hardness of the steel core is at least 45 on the Rockwell C hardness scale.
14. A projectile as in claim 1 wherein the core comprises a forward portion mounted ahead of the midsection, said forward portion having an ogival shape  
15 over at least a portion of its surface and wherein the junction between the forward and the midsection portions provides a relatively smooth transition zone.
15. A projectile as in claim 14 comprising an inwardly tapering end portion  
20 of the core positioned rearwardly of the cylindrical portion.
16. A projectile as in claim 15 wherein the rearwardly tapering end portion of the core has a half-conical angle of about 83°.
- 25 17. A projectile in accordance with claim 1 wherein the jacket material comprises gilding metal.
18. A projectile in accordance with claim 17 wherein the gilding metal jacket comprises approximately 90% copper and 10% zinc.
- 30 19. A projectile according to claim 18 wherein the gilding metal jacket is thicker than that normally used on conventional ball projectiles.

20. A projectile according to any of the above claims in combination with a casing dimensioned to fit into a standard firearm wherein the overall length of the projectile is greater than that of conventional ball projectiles and wherein the projectile, when fitted into its casing, provides a cartridge with a length suited to
- 5 fit into a standard firearm having a casing of the same diameter.